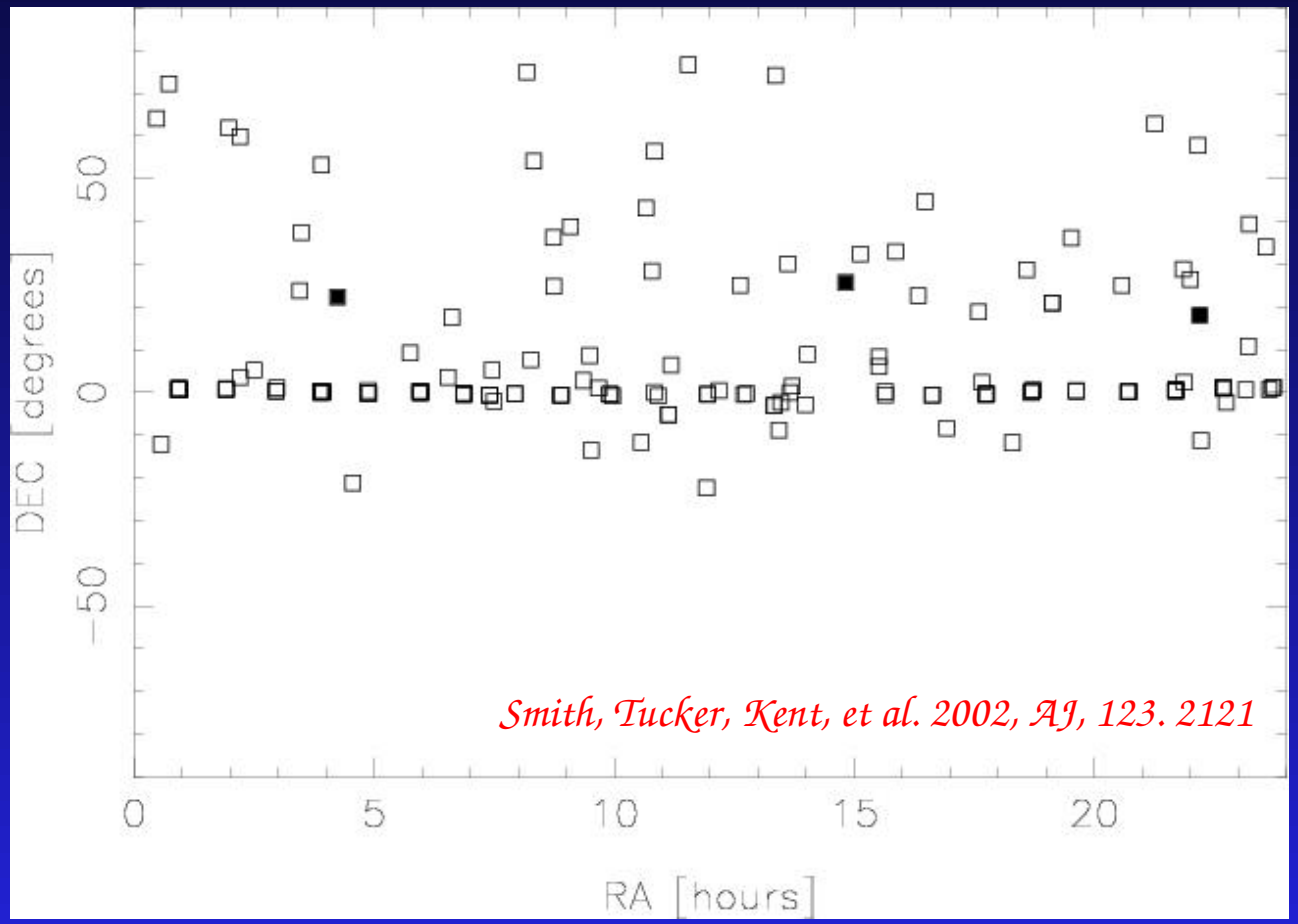
u'g'r'i'z' Standard Stars

Douglas L. Tucker
Fermilab

CTIO Dark Energy Camera Meeting
December 5-6, 2003

SDSS Use of Standard Stars

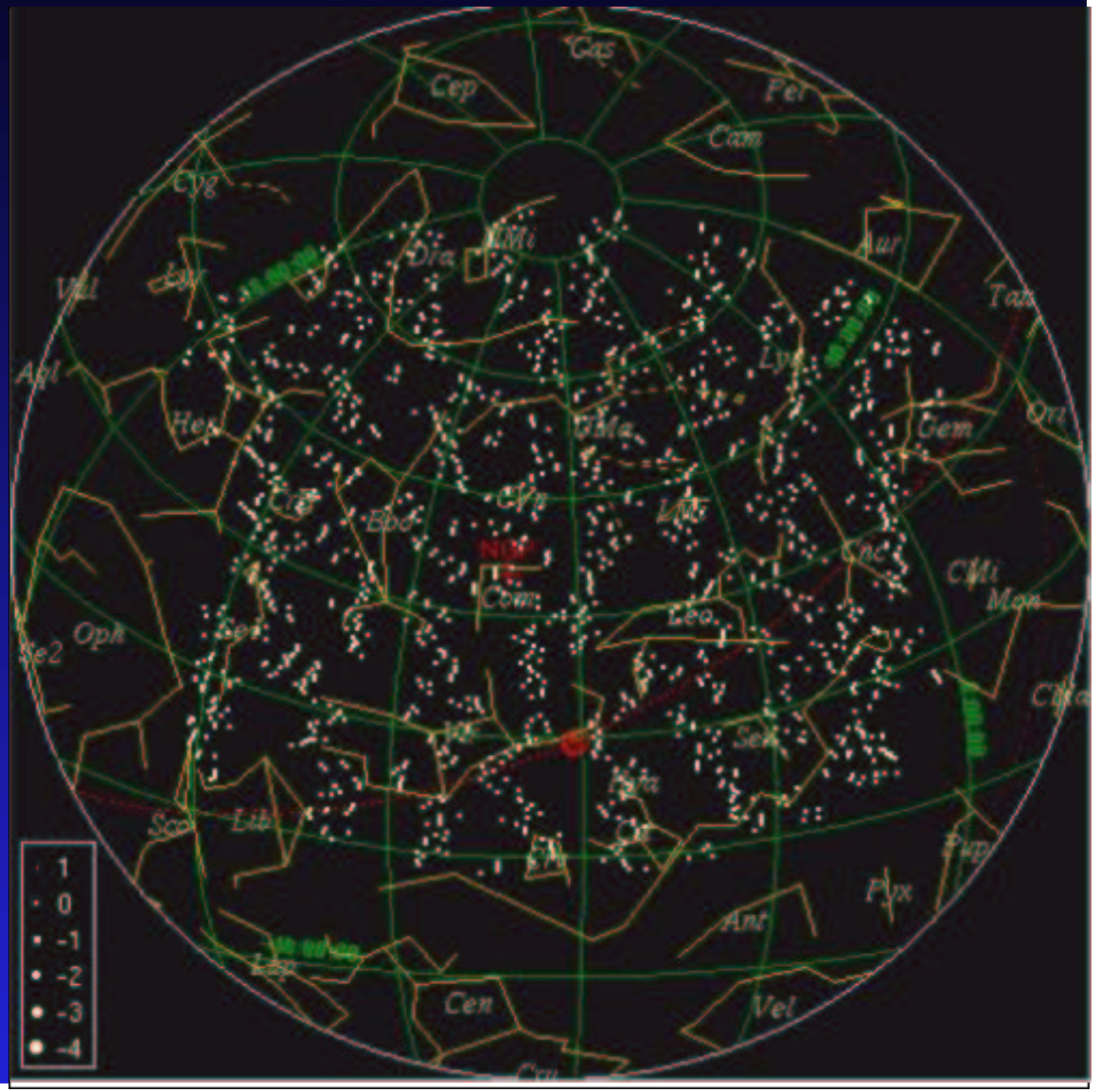
- Fundamentals
  - BD+17º4708, BD+26º2606, BD+21º0607
  - F subdwarfs
- Primaries
  - 155 non-variable stars
  - 8.5 < r' < 15
  - -0.6 < g'-r' < 1.6
  - Mostly $\delta > 0^{o}$



SDSS Use of Standard Stars

- Secondary Patches
  - 1520 patches
  - 40arcmin x 40arcmin
  - 4 patches per 'patch group' which spans the width of an SDSS stripe
  - Patch groups spaced roughly every 15° along the length of an SDSS stripe
  - 11 < r < 17.5

    (2.5m telescope's imager saturates at r=14)



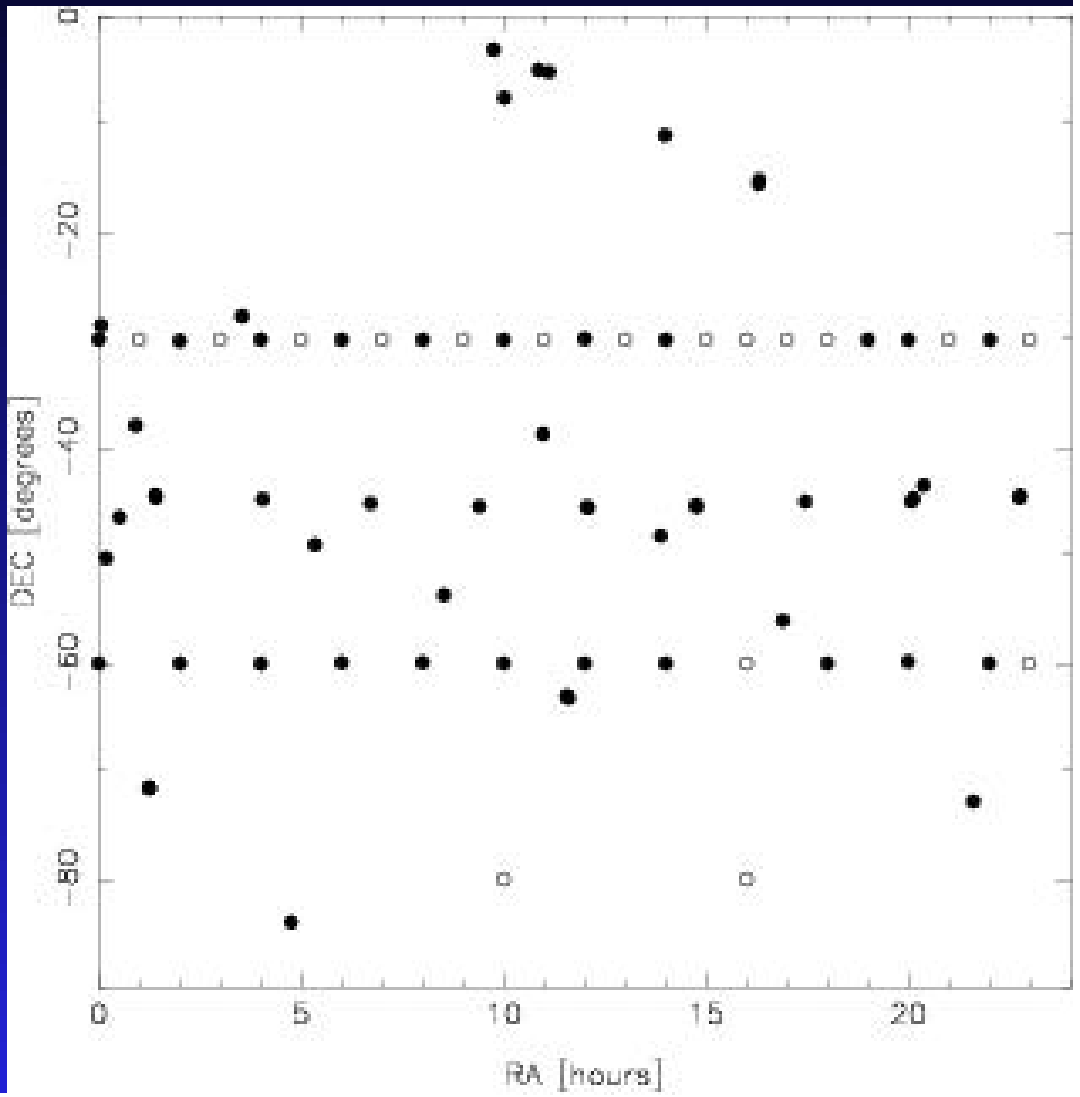
SDSS Use of Standard Stars

- 0.5m Photometric Telescope ("PT")
  - Observes Primaries to obtain nightly extinctions & zeropoints
  - Observes Secondary Patches to calibrate against Primaries
- 2.5m Telescope
  - Scans over Secondary Patches during normal course of observations
  - Does not waste time observing Primaries itself

Southern u'g'r'i'z' Standards

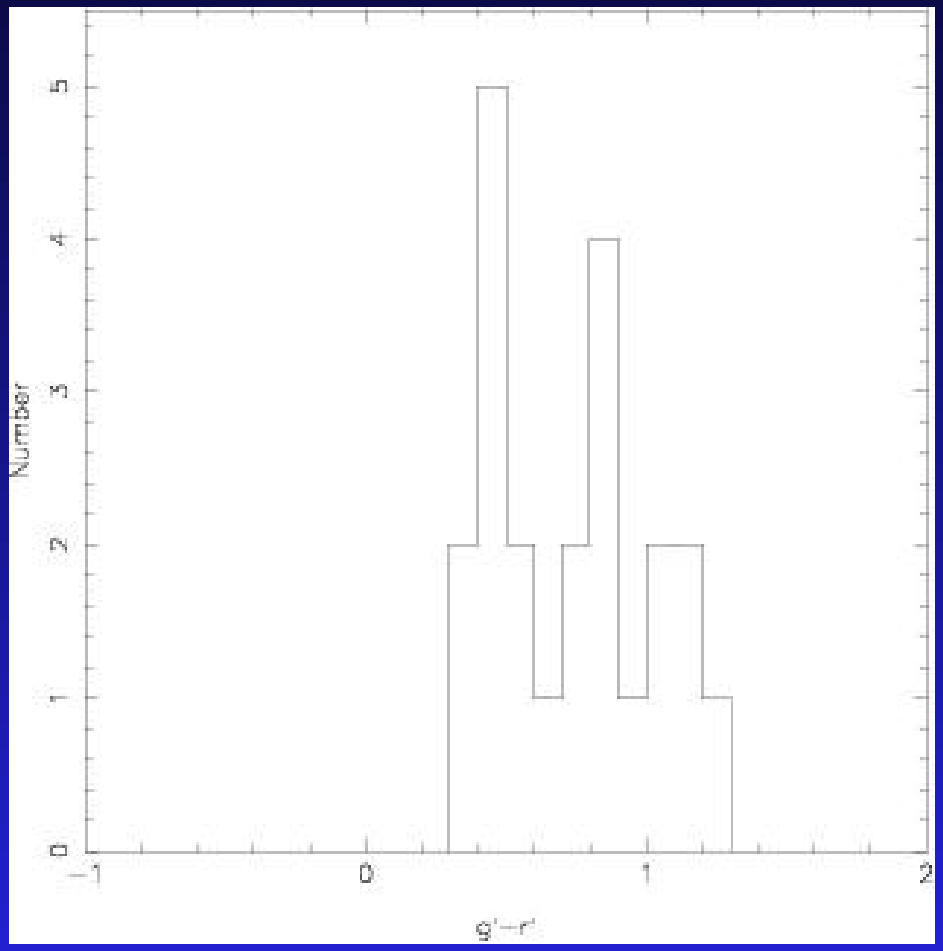
- NOAO Surveys Program
  - Smith, Tucker, Allam, Stoughton, Jorgensen, plus students
  - 2000-2004
  - CTIO-0.9m+Tk2k#3 (13.5' FOV)
  - 1 weeklong run every 4 months, for a total of 12 (+2?) runs
  - Standard *Fields*
  - 8 < r' < 18
  - 1 field every 1 hour in RA at -30
  - 1 field every 2 hours at -60
  - 1 field every 4 hours at -75
  - E-regions for -45
  - Special fields (CDFS, DLS, ...)

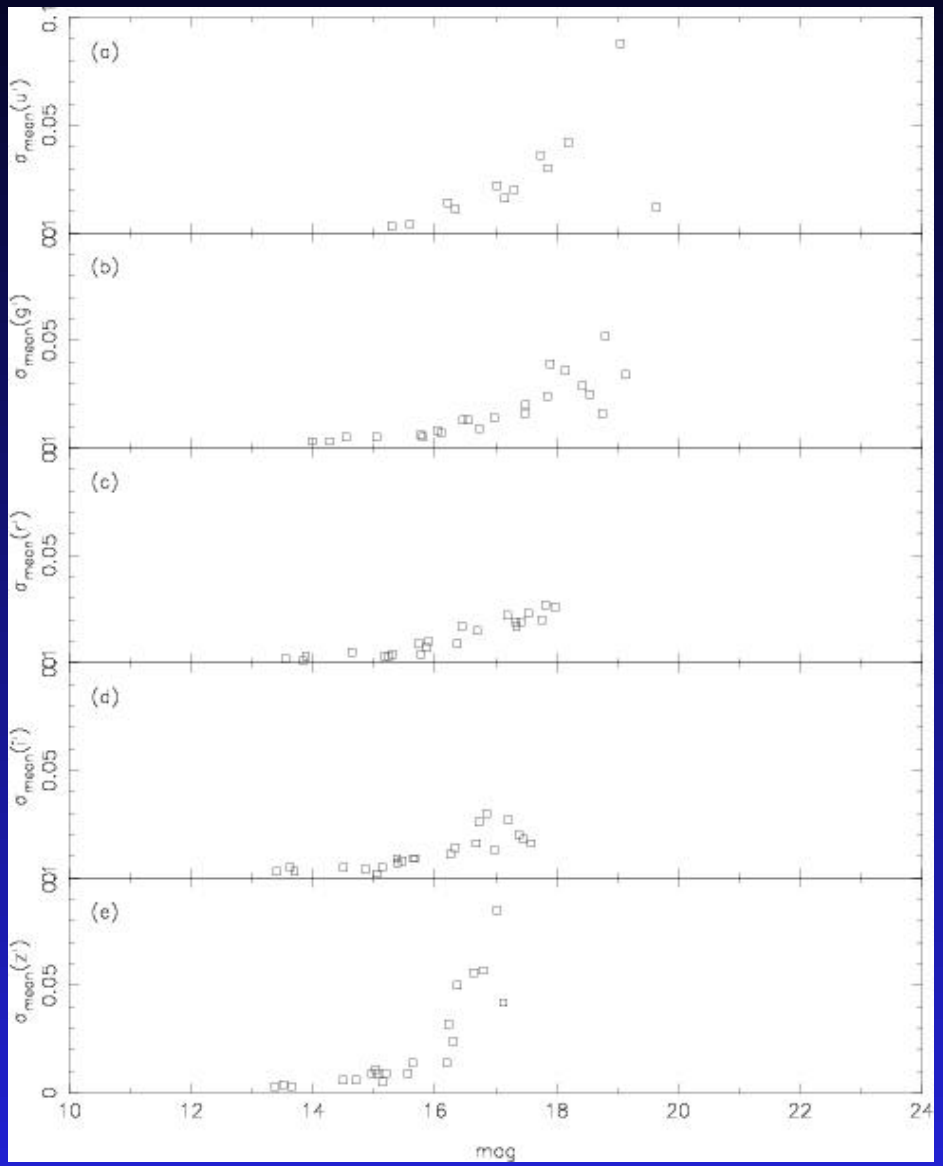
Status as of Dec 2002



Southern u'g'r'i'z' Standards

- CDFS Standards
  - Smith, Tucker, Allam, Rodgers 2003, AJ, 126, 2037





Southern u'g'r'i'z' Standards

Courtesy: NOAO/AURA/NSF